

NOTES ON SOME MEXICAN SPECIES OF CHRYSOPS  
(DIPTERA—TABANIDAE) AND THE DESCRIPTION OF A NEW SPECIES.

BY L. L. PECHUMAN, Cornell University, Ithaca, N. Y.

Due to the difficulty in securing material from Mexico, many of the specimens that are obtained are often of considerable interest. The writer recently had the opportunity of studying a number of specimens of *Chrysops* from Mexico, and even in this small lot of material one new species and two others of considerable rarity were found. It is to be hoped that more material in this group will be secured in the future.

The loan of specimens by Mr. T. H. G. Aitken and Dr. C. B. Philip is greatly appreciated.

*Chrysops affinis* Bellardi.

In a previous paper (1937, Rev. Ent. 7, p. 134) the writer re-described the male of this species which had been unknown since its original description in 1859. Recently, through the kindness of Dr. Philip, I have been able to examine a female of this species. Since the female has been previously unknown, a description of this sex will not be out of place at this time. A single specimen collected in Mexico by McGunnell was examined.

Length—10 mm.

*Head.* Frontoclypeus orange with a black spot at apex, denuded except for salmon colored pollen in center; cheeks pollinose with rather long hairs which are dense below; cheek callosities shining orange, darker laterally; front above antennae yellowish brown pollinose with black integument showing through in vicinity of ocelli; frontal callosity very wide, narrowly separated from eyes; orange margined with black above; front slightly wider than high; first two antennal segments swollen, orange with dense black hairs; third segment black, paler at base, covered with fine pale hairs; palpi and proboscis orange, the proboscis becoming darker at apex.

*Thorax.* Dorsum brownish pollinose with three indistinct brownish stripes, paler laterally; scutellum brownish pollinose; pleura grayish brown pollinose with gray hairs. Legs with front coxae orange, fuscous at apex; middle and hind coxae black with gray pollen; all coxae rather densely covered with pale hairs; trochanters reddish brown; femora orange, slightly darker at apex; tibiae orange shading to reddish brown toward apex; hind tibiae with a row of stiff golden hairs; front metatarsi dark brown; middle and hind metatarsi reddish brown

becoming darker at apex; remainder of tarsal segments mostly black, some showing paler at base. Wings as in male (Pechuman, 1937, fig. 1) except discal cell with a hyaline spot in center and basal infuscation of second basal cell is not as extensive as in first.

*Abdomen.* Dorsum largely black with grayish yellow markings. Posterior margins of all segments pale. First tergite with pale lateral margins; second with pale lateral margins and three pale more or less triangular invaginations of the posterior border, the center one of which reaches the anterior margin; third to fifth segments with similar pale invaginations none of which reaches the anterior margin; remaining segments mostly dark. Apex of abdomen with rather dense pale hair. Venter orange with a wide median fuscous band and a lateral one on each side; densely covered with pale hair.

*Heterochryops giganteus* described by Kröber (1925, *Konowia* 4, p. 229) is undoubtedly the female of *C. affinis*. The presence of a hyaline spot in the discal cell would place *C. affinis* in Kröber's *Heterochryops*, but as noted previously the discal cell of the male is completely infuscated.

*Chrysope apicalis* Bellardi.

This is the last of Bellardi's species which has been completely unknown to subsequent workers. According to Bellardi, the type was deposited in the Zoological Museum of Paris, but the writer was unable to locate the type in any of the Paris museums or in the British Museum. Through the kindness of Prof. Alceste Arcangeli and Dr. Enrico Tortonese, however, the type was located at the Museum of Zoology of the University of Turin. These gentlemen sent the writer a description of the type and colored drawings of the wing, a dorsal view of the head, thorax, and abdomen, and lateral and ventral views of the abdomen.

After a study of these drawings the writer is convinced that *C. apicalis* is the male of *C. scalarata* Bell., the description of which is on the page preceding that of *C. apicalis* in Bellardi's paper.

The wing pattern is the same as in *C. scalarata* except that the basal cells are two-thirds infuscated and the projection of the cross-band along the anterior branch of the fifth longitudinal vein ( $M_3$ ) is shorter than in most female specimens. The first antennal segment apparently is swollen about as much as in the average female specimen. The dorsum of the abdomen is essentially like that of the female but mid-dorsal spots are lacking. The yellow lateral spots on the first and second tergites coalesce as in the female, but the black stripe separating this spot from the yellow on the sides of

the abdomen is incomplete. In several females examined, however, a similar condition has been found. The markings of the venter are the same as in the female.

Ricardo (1901, *Ann. Nat. Hist.* 8, p. 304) records two *Chrysops* from Mexico which she believed to be males of *C. scalarata*. She also noted that the basal cells were partly infuscated. It is not unusual, however, for a species of *Chrysops* to have clear basal cells in the female and infuscated ones in the male.

The possibility that *C. scalarata* is the same as *C. lateralis* Wied. has been discussed by several workers, but probably nothing definite can be decided until Wiedemann's type is studied.

#### *Chrysops facialis* Towns.

This species has been previously known from a very few specimens, but the writer was able to examine a series of twenty-five specimens from Juan Manuel, Durango, Mexico, collected at an altitude of 9,300 ft. by A. Mead and M. Embury on May 29 and June 3, 1937. Two specimens from Arizona were also studied.

On the whole there was little variation in the specimens examined. The Arizona specimens had in general more yellow especially on the antennae and legs. In the Mexican specimens the antennae were yellow only on the inner portion of the first segment and the front coxae were usually dark. The disk of the frontal callosity was about half yellow in all the specimens examined; the species was originally described with a black frontal callosity but Brennan (1935, *U. Kans. Sci. Bul.* 22, p. 292) had already doubted the validity of this character. In some specimens the geminate spots on the second abdominal segment do not meet along the anterior margin of the segment, and several individuals had small lateral spots on the third segment. The apical spot was quite wide in all specimens examined, but in several it scarcely more than entered the apex of the second submarginal cell. In length the Mexican series varied from 6.6 to 8.9 mm., with an average of 7.5 mm.

Collected at the same time as the series of *C. facialis* were thirteen specimens which showed affinities with that species, but were so distinct in many respects and without intergrades with *C. facialis* that they may be designated as representing an undescribed species.

#### *Chrysops mutata* n. sp.

*Female.* Length—5.5 mm.

*Head.* Antennae black, somewhat shining; first two segments rather densely covered with black hairs; scape swollen, pedicel less so. Front slightly wider than high, grayish pollinose below frontal callosity, shading to yellowish above; de-

nuded in vicinity of ocelli; long blackish hairs scattered over surface. Frontal callosity narrowly separated from eyes; black, yellow on disk; a denuded line connects frontal callosity and lowest ocellus. Frontoclypeus largely shining black; two elongate denuded yellowish spots laterally and a yellow pollinose area in the center divide the black of the frontoclypeus into four spots which coalesce below. Cheeks yellow pollinose above; oral margins shining black with long grayish hairs. Palpi blackish brown with grayish hairs. Proboscis black, reddish brown above.

*Thorax.* Dorsum black with golden hairs; two pale lateral stripes are vaguely indicated. Pleura black with grayish pollen; hairs of pleura grayish white. Halteres yellow. Legs black; base of middle tibiae and most of middle and hind metatarsi yellowish. The wing pattern is similar to that of *C. facialis* but the first basal cell is infuscated more nearly to the end; the crossband includes all of the fifth posterior cell and spreads into the anal area. The apical spot is comparatively wide and extends into the apex of the second submarginal cell. The hyaline triangle extends beyond the second longitudinal vein but does not quite separate the apical spot from the crossband.

*Abdomen.* Dorsum of abdomen dull yellow. First tergite with a wide quadrate black spot which reaches the hind margin and reduces the yellow to a narrow lateral band on each side; second tergite with a large black emarginate spot which is narrower apically and which does not reach the posterior margin of the segment; a small black dot lies laterad on each side of the large spot; third tergite with four black spots with their bases united along the anterior margin of the segment; fourth and fifth segments each with four similar black spots which are entirely separated from each other; sixth and seventh segments mostly black. Segments two to seven inclusive have yellow hind margins. Venter with median and lateral rows of black spots which increase in size until on the fifth and following segments they unite to form a black band along the base of the segment.

*Type data.* Holotype female, Juan Manuel (near El Salto), Durango, Mexico, May 29, 1937 (Milton Embury). Alt. 9,300 ft. Paratypes, ten females, same data as holotype; one female, same locality as holotype, June 3, 1937 (A. Mead); one female, Hidalgo, Mexico, June 1, 1937 (A. Mead).

Holotype and two paratypes in the collection of the California Academy of Sciences, three paratypes in the collection of the writer, two paratypes each in the collections of Dr. C. B. Philip, Mr. T. H.



G. Aitken, and Mr. Mont A. Cazier, one paratype in the collection of the U. S. National Museum.

*Variations.* In several specimens the inner sides of the palpi and the proboscis are reddish brown; in others the apex of the fifth posterior cell is paler than the rest of the cell. In some specimens the round black spots on the second tergite are larger than in the type and in others they are completely absent. In several specimens the black spots on the third, fourth, and fifth segments are coalesced so as to form more or less regular bands across the bases of the segments. The length in the series varies from 4.8 to 5.7 mm. with an average of 5.5 mm.

*Comparative Notes.* *C. mutata* resembles *C. facialis* in many respects; the general wing pattern and shape of antennae is the same, and the arrangement of the black spots and the presence of a pollinose stripe on the frontoclypeus show a definite relationship to *C. facialis*. *C. mutata* differs from *C. facialis* in the generally smaller size, grayish pleural pile, greater extent of infuscation in the first basal and fifth posterior cells, the predominately black legs, and the greater extent of black on the abdomen.

---

### Note on Injury to *Gypsophilia Paniculata* by the Jerusalem Cricket, *Stenopelmatus Fuscus* Hald. (Tetti-goniidae—Orthoptera).

By J. J. DU BOIS

The author has chanced to make some interesting observations both in regard to the food habits and to economic damage inflicted by *Stenopelmatus fuscus* Hald. on *Gypsophilia paniculata flora plena* at Turlock, California, where that plant is a valuable commercial crop.

The area observed was a planting of about ten acres of varying years of growth and was observed over a period of three years.

The approximate damage sustained was ten to twenty-five per cent kill on young plants, but it was not so heavy on the older stock, as they did not kill the plants but simply destroyed some shoots.

The insects come to the surface at night and early morning and follow the shoot down to the graft eating all or else one half or more of the stem, leaving just a shell on one side. They often eat a little of the root.

Most of the damage is done in the early spring when the weather has turned warm and the plants are making a good growth. New land that has had lots of weeds and trash on it for years seems to be the source of the worst infestation.